unknown cause at an unusually early age in the males, and their consequent transference to both sexes."[1]

That sexual selection has played a very important part in the subsequent development of the horns and antlers of the Pecora there can be no reasonable doubt; but the known facts appear to me to indicate that they were probably *first* developed in both sexes as organs of defence against common enemies. They are present in the females of the *Camelopardalidæ*, in those of all the *Bovidæ* except twelve genera of *Antilopinæ*[2], and in those of one genus of the least-specialized section of the *Cervidæ*, while we have seen that they are not unfrequently abnormally developed in the two other genera of the same section with which we are best acquainted. The same abnormality, it may be added, occurs in at least one of the genera of Antelopes, in which the females are usually hornless[3].

On the assumption that the antlers and horns of the Pecora were first developed in the males only, their presence in the females of so many forms can only be explained by the hypothesis that "an unknown cause" has led to their transference from the other sex. On the other hand, if they were at first common to both male and female, the problem appears to me to be capable of a more satisfactory solution. In the males they would naturally be further developed by sexual selection, and in the females the strain on the constitution would tend to their reduction or even elimination—this strain, as Mr. Darwin himself has pointed out, being much the greatest in the *Cervidæ*, in which the weapons require to be renewed every year. That they should be retained (usually in reduced size) by the females of most of the forms with non-deciduous horns appears therefore to be natural; while their retention in the female of the Reindeer, and their occasional abnormal development in those of other little-specialized Deer, is no more than we should expect on the doctrine of heredity.

3. Remarks on some Parrots living in the Society's Gardens. By P. L. Sclater, M.A., Ph.D., F.R.S., Secretary to the Society.

[Received March 13, 1879.]

(Plate XXVIII.)

During the preparation of a new edition of the List of Vertebrates in the Society's Collection I have, as on former occasions of a like nature[4], made several notes referring to special rarities and necessary charges in nomenclature of the Psittacidæ, which I beg leave to offer to the Society.

Our series of Psittacidæ at the present moment consists of about 170 individuals, belonging to 98 species, amongst which, besides those

[1] *Tom. cit.* p. 504.
[2] Sir V. Brooke, P. Z. S. 1878, p. 884.
[3] Blyth, as quoted by Mr. Darwin, 'Descent of Man,' p. 505.
[4] *Cf.* P. Z. S. 1867, p. 183, et 1871, p. 493.

specially mentioned below, are examples of *Licmetis gymnopis*, *Ara spixi*[1], *Coracopsis barklyi*, *Chrysotis guildingi*, *Chrysotis bouqueti*[2], and *Nestor hypopolius*.

The species, however, to which I now wish to call special attention are the following;—

1. Brotogerys tuipara (Gm.), and

2. Brotogerys chrysoptera (Linn.).

Dr. Finsch has regarded the latter of these two birds as the young of the former, but, I believe, quite incorrectly, as will be apparent to those who examine our living specimens of these two species, of which I also exhibit skins from my collection. *B. chrysoptera* has a narrow frontal margin of dark brown, and a brownish throat, which never develops into the orange front and chin-spot of *B. tuipara*.

In my 'Catalogue of American Birds' (p. 347) I have called *B. tuipara* *B. notata*, being the bird figured in Pl. Enl. 77. fig. 2 (undè *Psitt. notatus*, Bodd.), and *B. chrysoptera* I have called *B. tuipara*.

Certain localities are, for *B. tuipara*, Barra do Rio Negro (*Wallace*), and for *B. chrysoptera*, Venezuela (*Mus.* P. L. S. et S.-G); but both species seem to occur in Guiana.

3. Palæornis cyanocephalus (Linn.).

4. Palæornis rosa (Bodd.).

We have now also adult examples of both these nearly allied species, which have likewise been united by Dr. Finsch, but are clearly distinguished by Mr. Hume (Stray Feath. ii. p. 15).

Mr. Gould has lately given excellent figures of both (Birds of Asia, pt. xxvi.), but has unfortunately reversed the names.

5. Palæornis fasciatus.

Psittacus fasciatus, P. L. S. Müller (ex Pl. Enl. 517).

Palæornis fasciatus, Hume, Stray Feath. vii. p. 164.

Palæornis melanorhyncha, Scl. P. Z. S. 1871, p. 771, et 1878, p. 999; Blyth, Ibis, 1873, p. 79.

Palæornis schisticeps, Scl. P. Z. S. 1876, p. 696.

I quite agree with Mr. Hume (*l. s. c.*) that the figure in the Planches Enluminées (517), attributed by Finsch to *P. javanicus*, is more probably intended for its Indian ally (*P. lathami* et *P. melanorhynchus* of Finsch), and that the best plan is to call the latter *P. fasciatus*.

Of this species we have now three examples living in the collection, namely:—

a. A black-billed bird (and therefore, I presume, a female), presented by Mr. Edmund Warre, April 12, 1871, and stated to have been brought from Cashmere. This is the specimen alluded to by Blyth, Ibis, *l. s. c.*

[1] See P. Z. S. 1878, p. 976, pl. lxi.

[2] See P. Z. S. 1875, p. 61, pl. xi.

b. A second black-billed specimen, purchased Sept. 25, 1876. This bird, when in immature and dirty plumage, on its first arrival, was wrongly referred to *P. schisticeps*, of which species we have never received living specimens.

c. A bird with the upper mandible red, and therefore, I suppose, male, brought from Muttra, North-west Provinces, and presented Feb. 21, 1878, by Mrs. Barthorp.

Of the allied form of Java and Borneo (*P. javanicus* [1]) we have at present no specimens in the Collection.

6. CAICA XANTHOMERA. (Plate XXVIII.)

Caica xanthomeria, Sclater, P. Z. S. 1857, p. 266.
Psittacus xanthomerius, Gray, List of Psitt. p. 73.
Caica xanthomera, Scl. P. Z. S. 1877, p. 419.
Pionius xanthomerus, Finsch, Papag. ii. p. 437.

Of this beautiful Parrot we received two living examples from Yquitos, on the Peruvian Amazons, in 1877, as already recorded. One of these is dead; but the other is now in fine plumage, as the accompanying sketch by Mr. Smit (Plate XXVIII.) will show.

Besides the type in the British Museum, from the Rio Javari (*Bates*), and a single example obtained alive by Natterer on the Madeira (Pelz. Orn. Bras. p. 264), our specimens are, I believe, the only ones known of this species.

4. Notes on the Visceral Anatomy of the Tupaia of Burmah (*Tupaia belangeri*). By A. H. GARROD, M.A., F.R.S., Prosector to the Society.

[Received March 5, 1879.]

On February 8th, 1875, the Society received as a present from the Hon. Ashley Eden, C.S.I., a male Burmese specimen of *Tupaia belangeri*, which died, without any perceptible organic lesion, on December 18th, 1876.

Not much is known of the anatomy of the Tupaiidæ, the most important account of the viscera with which I am acquainted being that by Dr. Cantor on *Tupaia ferruginea* [2].

Subjoined are the notes on the anatomy of the Society's specimen of *T. belangeri*.

The parotid and submaxillary glands are of about equal size, flattened and subcircular, a little less than half an inch in diameter, the duct of the former coursing superficially near the lower border of the powerful masseter muscle. The duct of the latter opens

[1] I cannot agree with Dr. Finsch's transfer of the name *alexandri* (Linn.) from the bird usually so called (i. e. *eupatrius*, Finsch) to the present species, for which the first name properly applicable seems to be *javanicus* of Osbeck, given in J. R. Forster's translation of Osbeck's Voyage to China, &c., vol. i. p. 156 (1781).

[2] Journ. Asiatic Soc. of Bengal vol. xv. 1846, p. 189.